The Relationship Between Teacher Practices and the Task-Appropriate and Social Behavior of Students with Behavioral Disorders

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ABSTRACT: In this study we examined the association between teacher practices and the task-appropriate behavior of students with behavioral disorders (BD). We collected direct observational data on general educators and on matched pairs of middle school students with and without BD. We found that teachers' use of student-centered practices (e.g., cooperative, support, information explicitness) versus teacher-directed classroom management practices was associated with positive and task-appropriate student behavior, but only for students with BD. In addition, teachers' negative practices were associated with negative behavior for students with BD. The findings and group differences we reported were moderated by specific activity settings, due perhaps to the types of teacher practices that were elicited in those settings. The major implication of this research is that the behavior of students with BD in general education settings is more dependent on setting factors and teacher practices than is the behavior of students without BD.

Studies that use observation methodology to examine teachers' management practices are in critical demand, especially since these practices affect students with behavioral disorders (BD) in general education settings (Gunter & Denny, 1996; Lloyd, Kauffman, & Kupersmidt, 1990). Teacher practices lend themselves to examination because they are modifiable and are presumed to have a direct influence on student behavior. Teacher practices include what teachers say to students (e.g., praise, offering choices, directives) as well as the activity settings they select (e.g., teacher-directed formats, seatwork), which may set the occasion for student misbehavior or support task-appropriate behavior. Teachers' statements also may interact with their choice of activity settings to provide additional benefits for students with BD.

Several types of teacher practices have been linked with students' positive behavior. For students without disabilities, choice has been associated with greater creativity (Amabile & Gitomer, 1984). For students with developmental disorders, choice has been associated with reduced problem behavior (Dyer, Dunlap, & Winterling, 1990), and for students with BD, greater persistence on a chosen activity has been observed (Dunlap et al., 1993). The intervening variables in these studies of choice may actually be students' interests or ability levels. That is, even though each study attempted to provide task or activity options of comparable general difficulty, students may select options according to their specific abilities and interests. In support of this reasoning, when children were allowed to choose among activities that did vary in difficulty, they selected tasks that were moderately challenging (Danner & Lonky, 1981). Thus, choice may moderate task difficulty for students with BD, who typically manifest task-avoidance types of behavior when presented with difficult tasks (Center, Deitz, & Kaufman, 1982; Gunter, Shores, Jack, Denny, & DePaepe, 1994).

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Similar to choice, information-explicit management, or giving clear directives and feedback, should decrease behavior that functions to avoid academic demands (Gunter, Denny, Jack, Shores, & Nelson, 1993). For example, some researchers found that teacher feedback about incorrect responses was associated with achievement gains for students of average ability (Brophy & Good, 1986) and low ability (Larrivee, 1985). Similarly, Larrivee (1985) found that effective teachers of students of low ability used reminders specifying what the students needed to be doing. Thus, we theorized that information-explicit practices would be of particular benefit for students with BD by providing structure for appropriate and inappropriate behavior and performance, thereby reducing the aversiveness of task demands.

Teachers' supportive practices (i.e., positive verbal responses during academic instruction) have been found to be associated with increased student achievement (Brophy & Good, 1986), interest, enjoyment (Cameron & Pierce, 1994), and appropriate task behavior (Nowacek, McKinney, & Hallahan, 1990). For example, high school teachers with high self-efficacy (i.e., the belief that they can produce desired learning outcomes), more than teachers with low self-efficacy, were found to be warm, accepting, and responsive to students. In turn, their students demonstrated more enthusiasm, higher levels of initiation of interaction with teachers, and higher levels of achievement (Ashton & Webb, 1986). We assumed that students with BD might need higher rates of teacher positive attention than other students due to the familiarity many of these students have with negative family role models (e.g., controlling, restrictive, rejecting management practices, Campbell, Breaux, Ewing, & Szumowski, 1986; physical and verbal aggression of siblings and parents, Stormont-Spurgin & Zentall, 1995). Although they may have a greater need for positive attention, students rated low in competence by teachers actually received less positive attention for compliance than students rated high in competence (Strain, Lambert, Kerr, Stagg, & Lenkner, 1983).

The use of cooperative rather than competitive tasks has been found to produce higher rates of positive social interactions for students with BD (Lloyd et al., 1990). Unpopular boys in a cooperative group activity made more group-oriented statements, and their average peers were more tolerant of them than in a competitive activity (Gelb & Jacobson, 1988). Competitive settings facilitate social comparisons, which may increase differences between unpopular children and their peers (Ames & Archer, 1988; Elliott & Dweck, 1988). Teachers promote cooperativeness through (a) use of divergent tasks, which are often implemented concurrently, (b) pairs or groups of students working on tasks (Marshall & Weinstein, 1984), and (c) cooperative skill instruction to increase appropriate interactions (Cohen, 1994).

A teacher's overall negative style can function as a setting event by contributing to a generally poor learning climate. For example, negative teacher practices (e.g., verbal reprimands, physical restraint) have been linked to increased (a) disruptive behavior (e.g., gross-motor activities and noise making in elementary students without disabilities [Thomas, Becker, & Armstrong, 1968] and in students with mental retardation [Mace, Page, Ivancic, & O'Brien, 1986]) and (b) negative behavior (e.g., disruption, off-task behavior of students with BD [Van Acker, Grant, & Henry, 1996]). Similarly, when teachers select punitive classroom management responses (e.g., response cost, suspension), these responses can function as setting events wherein students perceive teachers' hostile intentions, which have been found to elicit students' reactive aggression (Hartman & Stage, 2000). That is, negative teacher behavior can set the stage for disruptive behavior in students with BD.

In addition to the influence of teacher practices, student behavior is also a function of activity settings (e.g., independent seatwork, transitions, teacher- or student-directed activities) selected by the teacher. Unfortunately, researchers rarely identify constructs underlying activity settings (see Zentall, 1985; 1995). To advance the literature in this area, we have identified setting constructs by (a) the degree of teacher versus student control/pacing of an activity and (b) the extent to which students appear to have access to input, feedback, and/or stimulation from others (i.e., teacher and peers). For example, student-directed activity settings with minimal teacher input (e.g., seatwork, discussion pairs, and small-group as well as whole-class formats such as collaborative writing projects and student-directed discussion) have high student control over pacing and access to peers. Teacher-directed activity settings (e.g., pairs, small groups, and whole-class formats with lecture,

demonstration, drill, or question-and-answer instruction) in which teachers actively instruct, direct, and pace the activity reflect high teacher control over pacing and low access to teachers or to peers. In this setting we would expect higher rates of student behavioral problems due to reduced choice and reduced access to appropriate levels of task interest, difficulty, and pacing. These teacher-directed settings may also set the occasion for student noncompliance, which is thought to be a keystone behavior leading to poor peer relations and academic skill deficits (Patterson, 1982; 1986; Patterson, Reid, & Dishion, 1992).

Some settings provide a mixture of these variables. Independent seatwork settings have high student control over pacing but relatively low access to teachers or peers who can provide information, feedback, or stimulation. Because independent seatwork does not provide access to others but allows for individual pacing without wait time, we decided that the practices teachers employ in this setting could be especially important. Transitions may also depend upon the practices that teachers use, because these settings have high teacher control over pacing (i.e., the teacher typically signals the start and end of activities) but also provide high access to teachers and peers.

Even within some apparently less optimal activity settings, teacher practices could alter our predictions in important ways. That is, teacher practices that involve providing choice, support, information, or cooperative tasks may determine task-appropriate or negative behavior within specific settings, especially for students with BD.

The purpose of our study was to assess the effects of classroom management practices on students with BD and their classmates. We predicted that four teacher practices (i.e., high rates of choice, support, information explicitness, cooperative practices) would be associated with higher rates of task-appropriate behavior in students with BD, but that the demonstration of these practices might depend on the activity setting. We also predicted that high rates of negative teacher practices would correlate with high rates of negative behavior in students across settings. Although these practices would appear to be critical for students with BD, we did not have specific predictions about the effects of these practices on students without BD.

Method

Participants

School/Principal Sample

The sample included 5 participating schools (i.e., 4 middle schools and 1 junior-senior high school; 4 urban, 1 rural). Each school had at least one social studies or English teacher who agreed to participate, along with a consenting pair of students. Initially 35 schools (i.e., 19 middle schools, 16 junior-senior high schools) were identified for potential inclusion based on their location within a 2 1/2 hour drive radius. School principals were contacted by telephone to arrange a meeting to discuss the study. Of the 35 schools contacted, 23 (57%) agreed to participate, including 11 middle schools and 12 junior-senior high schools. Of these, 52% drew from an urban population over 5,000, 3% drew from a suburban population over 3,500, and 45% drew from a rural population under 3,500. To increase our sample, we then contacted by telephone the principals of 5 additional schools (3 middle schools and 2 junior-high schools) at a greater distance and offered them a substitute teaching service. Of these, two middle school principals agreed to participate. For all participating schools, principals provided the names of their social studies and English teachers, who were then mailed a packet of materials.

Teachers of English and social studies were chosen because both subject areas could be taught either with textbooks or through cooperative activities (e.g., peer editors, cooperative projects). Selecting middle schools allowed us to keep subject area and time of day constant while observing teachers and students.

Teacher Sample

Teachers were recruited for participation through a packet consisting of an overview of the study, consent forms, the Teacher Data Form, Teacher Nomination Forms 1 and 2, and small gifts. Teachers were invited if they had taught for at least 2 years at that particular school and had at least one student with the characteristics of interest in one of their classes. These procedures and selection criteria reduced our initial sample of 172 social studies and English teachers packets mailed to 72

packets initially returned (42%) and 11 teachers agreeing to participate (15%).

A follow-up Reasons for Nonparticipation Checklist was mailed to those teachers who declined to participate ($n = 61$) and those from whom no response was received ($n = 100$). An additional 44 packets were returned, with 6 more teachers agreeing to participate (15%). Of those teachers who declined participation ($n = 99$), 82 (83%) returned the Reasons for Nonparticipation Checklist. Fifty teachers (61%) gave reasons related to student criteria; that is, they were not comfortable identifying students for the study (49%) or no students met the criteria (12%). Another 45 teachers (54%) gave logistical reasons; that is, they were too busy (47%) or thought the observational procedure was too intrusive (7%). Finally, 7 teachers (9%) indicated personal reasons for not participating (e.g., maternity leave). Some teachers checked more than one category.

The final teacher sample included 17 teachers (12 English, 4 social studies, 1 both subjects) who had at least one student with BD in their class. Of these, 6 taught grade 6, 7 taught grade 7, 3 taught grade 8, and 1 taught both grades 6 and 7. Additional student criteria, described below, further reduced our sample to 8 teachers (7 female, 1 male; all Caucasian) participating in the actual study (see Student Sample for details).

Student Sample

Research has documented that teachers are valid informants in the assessment of conduct disorder and oppositional defiant disorder (Hart, Lahey, Loeber, & Hanson, 1994) and hyperactivity (Loeber, Green, & Lahey, 1990). Therefore teachers were asked to identify students for the study. Teachers who agreed to participate in the study used Teacher Nomination Form 1 to nominate 1 or, at most, 2 students with behavioral difficulties who exhibited at least 3 of 12 behavioral problems adapted from the Behavior Evaluation Scale-2 (BES-2; McCarney, Leigh, & Cornbleet, 1983) (e.g., talks at inappropriate times, disrupts the work of others, does not obey teacher directives or classroom rules). Teachers were asked to nominate another student from the same class who was similar in age, gender, race, and estimated mental ability, but who had average behavior. (We did not have permission to access IQ data.) In addition, teachers were provided with an alternate form, Teacher Nomination Form 2, to nominate 1 to 2 students with mild behavioral difficulties specific to attention deficit with hyperactivity disorder (ADHD) who exhibited the characteristics for impulsivity and hyperactivity using items from the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders,* Fourth Edition (DSM-IV). Using Teacher Nomination Form 2, teachers again were asked to nominate an average student pair (as per Teacher Nomination Form 1).

Parent and student permission were requested from all nominated students, and 46 consents were returned. Teachers completed the BES-2 (McCarney et al., 1983) and the hyperactivity/impulsivity items from the DSM-IV for both students they nominated as an added check on their nominations. We assumed that students with serious BD, who met the criterion recommended for the BES-2, would also meet DSM-IV criteria. In fact, only 2 of the students with BD in our final sample met fewer than 6 of the required hyperactivity/impulsivity items, and these 2 students met 4 of the items. To increase the sample size, these 2 students with milder BD were included. Thus, the group with BD was defined by a low standard score (7 or below) on the Interpersonal Difficulties (ID) or Inappropriate Behavior (NB) subscale of the BES-2 and if they met criterion on four or more hyperactivity/impulsivity items from the DSM-IV ($M = 6.63$, $SD = 2.45$). Of those students nominated as having BD, with parental/student consent, 88% met our criteria.

Students were identified as having average behavior if they received a standard score of 9 or above on the BES-2 subscales and met no criteria on the DSM-IV. Standard scores from 8 through 12 on the BES-2 are considered to be statistically average or typical, and standard scores below 8 are considered statistically atypical. The BES-2 has been used in the diagnosis of behavioral disorders and emotional disturbance (McCarney, Leigh, & Cornbleet, 1983). Reliability for the BES-2 has been adequate (internal consistency = .80 or higher, test-retest reliability = .90 or higher).

A total of 40 students (16 with BD and 24 with average behavior) agreed to participate (87% of 46 consents returned); 6 students or their parents declined participation. Of the 40 students, 24 were eliminated because (a) they failed to meet all criteria, or (b) one member of a matched pair changed classroom placement or was missing from a matched pair.

TABLE 1
Analysis of Variance for Group Differences in Demographic Data ($n = 16$)

Measure	*Students with Behavioral Difficulties*		*Students with Average Behavior*		
	M	*SD*	*M*	*SD*	*F(1, 16)*
Age	159.50	10.62	152.75	8.35	1.99
Behavior					34.13****
Interpersonal[a]	6.12	1.36	11.38	1.06	74.39****
Inappropriate[a]	5.86	1.13	11.88	1.25	102.08****
DSM-IV items[b]	6.63	2.45	.13	.35	55.35****
Achievement[c]					1.46
Reading	103.75	10.13	113.25	14.79	
Written lang	100.50	12.74	107.13	12.35	

Note. [a] This was assessed by a subscale of the Behavior Evaluation Scale-2 by McCarney, Leigh, & Cornbleet, 1983. [b]These items included the nine criteria for hyperactivity and impulsivity from the DSM-IV. [c] Achievement records for six of the student pairs consisted of their most recent group test results from the Indiana Statewide Tests of Educational Progress (ISTEP, 1996). Achievement records for two student pairs consisted of their most recent test results from the Comprehensive Tests of Basic Skills, 4th edition (CTBS-4; Hoover, 1984).
****$p < .0001$

The final student sample consisted of 8 matched pairs of male students with and without BD (40%) who met the criteria (i.e., 4 student pairs from grade 6 and 4 student pairs from grade 7; all Caucasian). Of the students with BD, student records indicated that one 7th grader was receiving special education services for a learning disability in mathematics, one 6th grader qualified for services for ADHD under Section 504, and one 6th grader was being evaluated for an emotional or behavioral disorder (E/BD) at the time of the study. That our final sample of students did not include more students officially labeled as having E/BD was a reflection of the more restrictive placements typically used for these students. However, teachers were aware that they could nominate students with E/BD if such students were receiving instruction in their classrooms for any part of the day.

Group Equivalence

Multivariate analysis of variance (MANOVA) yielded significant differences between groups on intercorrelated behavioral rating measures but not in achievement (i.e., combined reading and written language scores) or in age (see Table 1). The achievement findings provide validation for teachers' attempts to match children on estimated mental ability.

Measures

Teacher Data Form

The teacher data form yielded age, grade level taught, subject area taught, years of experience, and highest degree earned. Research indicates that teacher experience plays a part in intervention choice (Witt, Moe, Gutkin, & Andrews, 1984; Witt & Robbins, 1985). Teachers with more than 5 years' experience tended to choose more positive interventions than those with less experience when confronted by a difficult student (Alderman & Nix, 1997).

Classroom Observation System

The classroom observation system was adapted from prior research, including the ecobehavioral observation scale of Greenwood and colleagues (e.g., Rotholz, Kamps, & Greenwood, 1989) and also from scales used in other teacher effectiveness research (Larrivee, 1985; Nowacek et al., 1990). Student behavior included positive (academic and social) and negative (academic, putdowns, physical, and inappropriate social and academic) behavior. Table 2 gives complete operational definitions for each of these behaviors. Teacher practice factors consisted of information explicitness (i.e., directives, feedback, coaching), support (positive and social), cooperative settings (e.g., student-led settings, divergent tasks, group

TABLE 2
Description of Study Variables and Behavioral Codes

Student positive behavior	
Social statements	Rate score for frequency of discrete positive statements or questions directed to peers or teacher that are unrelated to the learning activity or task at hand (e.g., "Billy's going with Becky." "I'll meet you after school."). Repetitive responses are not coded (e.g., "Stanley, look here. Stanley, look here."). Coded when at least half the class is engaging in either academic or social conversation (e.g., during transitions, student-directed instructional formats and during teacher-directed buzz-groups to discuss an instructional concept).
Academic positive	Rate score for discrete task-related statements or questions about the subject, instruction or task directed to peers or teacher (e.g., "Do we do numbers one and five?" "You can use my book." "My story is called. . ."). Discrete acts of compliance with a teacher request or direction (e.g., Standing in a corner when directed by the teacher, raising hand to answer a question.). If two behaviors occur simultaneously, only one action is coded. If student raises hand twice to the same teacher question, only one instance is coded.
Student negative behavior	
Academic-related	Rate score for discrete statements or questions of disapproval, criticism or negative evaluation directed to peers or teacher that are related to the learning situation (e.g., "Why do we have to do this?" "This stuff is stupid." "I hate this story."). Failure to comply with a request, and discrete practices of disapproval (e.g., banging desk when not called on). If student uses same action twice, only one instance is coded. If two behaviors occur simultaneously, only one behavior is coded.
Putdowns	Rate score for discrete statements or questions of disapproval, criticism or negative evaluation directed to peers or teacher that are unrelated to the learning situation (e.g., "Wimp." "You have no friends").
Pure Physical:	
Attention	Rate score for frequency of unnecessary or inappropriate non-task related physical behavior that calls at least one other person's attention to the student and is maintained for at least 3 seconds (e.g., making faces at peer or teacher, arm flapping.). A series of related physical behavior is coded once. A second series of related physical behavior is coded only when behavior stops for at least 3 seconds.
Interrupt	Rate score for discrete acts of physical contact with a peer or peer's object that is not appropriate to the learning situation (e.g., poking peer with pencil, shoving, grabbing paper, kicking chair). A series of repetitive movements (e.g., kicking) is coded only once. A second series of repetitive movements is coded only when the student ceases such movement for a period of at least 3 seconds.
Not appropriate:	
Social	Rate score for discrete positive statements or questions directed to peers or teacher that are unrelated to the learning activity or task at hand that occur when teacher is talking (e.g., lecturing, reading, or giving instructions) or when a peer is talking to the class (e.g., presenting, answering a teacher question). Also coded during independent seatwork when student initiates an interaction or responds to and then maintains a peer's conversational initiation.
Academic	Rate score for discrete task-related statements or questions about the subject, instruction or task directed to peers or teacher, that occur when teacher is talking or when a peer is talking to the class. Also coded during independent seatwork when student initiates an academic-related interaction or responds to and then maintains a peer's initiation.

continues

TABLE 2 *Continued*

Teacher Practices	
Informational Explicitness Factor 1	
Directives	A rate score for frequency of the following behavior divided by the number of observational minutes. Discrete statements to convey to students what is wanted or expected related to the learning situation (e.g., "You need to be working on your project." "Tell me. . ." "Take out your book"). Does not include reading directions aloud.
Feedback	A rate score for frequency of the following behavior divided by the number of observational minutes. Discrete statement that accompanies a positive statement, but provides more information or extends a student's response (e.g., "I like the way you wrote that." "So, you think the main character wanted to find a way out").
Coaching	A rate score for frequency of the following behavior divided by the number of observational minutes. Discrete statement to provide a hint, prompt, request for extension or improvement of an answer or a question to help the student respond correctly or behave appropriately (e.g., "In what way was that true?" "What should you be working on right now?" "Tell me more about that").
Support Factor 2	
Positive	A rate score for frequency of the following behavior divided by the number of observational minutes. Discrete statement of praise or approval to or about the student related to the learning situation (e.g., "Wonderful." "Good work!"). Also, includes repeating back a student's response.
Social	A rate score for frequency of the following behavior divided by the number of observational minutes. Discrete positive social statement to the student that is unrelated to the learning situation (e.g., "How's your sister doing these days?" "You're quite the talker."). Also includes positive nonverbal behavior (e.g., a hug or pat). Does not include smiling.
Choice Factor 3	A rate score for frequency of the following behavior divided by the number of observational minutes. A discrete question to find out what students want or eliciting a choice about what to learn, how to learn, how well to learn or why to learn (e.g., "Decide how you want to present your report." "You may pick which topic you want to explore." "Do you have any ideas for how to handle this problem?" "Do you want to read or write in your journal next?").
Cooperative Factor 4	A composite score across all activity structures of the number of student-directed activity structures, divergent tasks (including mixed tasks), different activities existing concurrently, and group facilitation strategies (i.e., rotating student roles, directing/instructing students in how to work together, modeling appropriate collaborative behavior) used across the entire observational structure.
Low Perceived Control Factor 5	
Negative	A rate score for frequency of the following behavior divided by the number of observational minutes. Discrete statement of disapproval, criticism or a negative evaluation of the student (e.g., "Stop doing that!" "If you don't. . . then. . ." "You have a warning." "Shhh!" "I don't appreciate that comment."). Does not include saying "no" in response to a student's question. Includes removing the student from the task or denying immediate or delayed privileges (e.g., giving a detention or time-out).

continues

TABLE 2 *Continued*

***Teacher Practices* continued**

Activity structures

Teacher-directed	Pairs, small groups, and whole class formats in which the teacher actively instructs, directs, and paces the activity (e.g., student pairs or groups work to teacher prompts, lecture, demonstration, drill, question-answer), opportunities for peer interaction are low, and information or assistance is available only from the teacher.
Transitions	Student-paced, but teacher-directed activity involving moving from one activity to another from teacher's initiation to when activity begins, as cued by teacher directive or question or when majority of class is engaged in new activity (e.g., taking grades, handing out papers, collecting money, explaining grades or upcoming school activities, teacher says, "Take out your books" and students do so, housekeeping), in which opportunities for peer interaction are high, and information/assistance is available from peers or teacher.
Seatwork	Independent work carried out at the child's desk when peer interaction is low and information or assistance is available only from the teacher.
Student-directed	Seatwork or discussion pairs, small group and whole class formats in which students work with minimal teacher interruption (e.g., projects, collaborative writing, cooperative activities, student-directed discussion to reflect on topic or stimulate thinking), opportunities for peer interaction are high, and information or assistance is available from peers and teacher.

Task Features

Different activity	When students work on different projects at the same time.
Divergent task	Has more than one right answer.
Convergent task	Has only one right and one wrong answer.
Mixed task	Both divergent and convergent tasks

Group Facilitation Strategies

Rotating	Rotating student roles for pair or group work
Cooperative training	Directing/instructing students in how to work together, modeling appropriate interactional behavior.

Note. To examine written assignments, tasks were coded at the end of each observational session. Group facilitation strategies were also coded at the end of each session as present or not present during that session.

facilitation strategies, concurrent activities), and choice. See Table 2 for behavioral definitions and how these were combined to form factors.

One of two observers visited each teacher's classroom 5 times for approximately 45 minutes each (range = 14–46 min, average = 37.71 min). In one classroom, only 4 days of observations were possible due to student scheduling changes. Researchers minimized potential bias by (a) keeping the observers naïve about the study's purpose and students' behavioral status, (b) preassigning each student in a matched pair to a random observation order (1 or 2), and (c) seating observers at least .6096 m from one another and by asking them not to interact during the session. Observers recorded the date, time, subject area, and teacher and school code numbers on the observation form when they entered the classroom and then coded variables related to the activity setting (e.g., student-directed). The beginning of an activity setting was denoted by writing the word *transition* when the teacher directed students to move to another activity. To code teacher practices and student behavior, observers wore headsets through which a prerecorded voice announced the beginning

of each coding interval. Auditory signals of 30-s duration directed the focus of the observer's attention first to the teacher and then to the student (1 or 2). Observers coded the frequency of each behavior within each interval using continuous event recording. A plus tally (+) indicated positive student behavior (i.e., task-appropriate or social) and a minus tally (–) indicated behavior that was not appropriate for the time. A regular slash mark was used for all other behavior (e.g., negative academic behavior, putdowns). At the end of each session, observer(s) circled "different activity" and/or "group facilitation strategy" if either had been used (see Table 2). To determine task type (convergent, divergent, or mixed), observer(s) also viewed any written material used during the session and circled the appropriate task type category.

An independent coder later summed (a) the frequency of each behavior for teacher and students (e.g., total number of directives) for each activity setting (e.g., independent seatwork) and (b) the total number of 30-s observational intervals per teacher and per each student for each activity setting and converted this into minutes. A rate score was obtained by dividing the frequency of each behavior by the total number of observational minutes for each teacher or student (e.g., frequency of social statements for student 1 divided by total number of minutes student 1 was observed).

Reliability

Observers were trained for 30 hrs with three sets of videotapes (taken from a 6th-grade social studies, a 6th-grade English, and a 9th-grade English classroom), using the categories for observation, their definitions, and examples (see Table 2). Observers then practiced coding a classroom for at least nine 30-min sessions. Observers were trained to an overall interobserver agreement level of 80% across student behavior and teacher practices before data collection began. Agreement was assessed using the mean ratio agreement for frequency data (Kazdin, 1982) by combining the total number of intervals per teacher and for each student and each behavior for that observational session. Then the smaller behavioral score for each observer (for each student and for each teacher behavior) was divided by the larger score and converted to a percentage.

Interrater reliability was established on 20% of the classroom observations by having two observers concurrently code 1 session for every 5 classroom observation sessions (i.e., once in each classroom). Interobserver reliability across all student and teacher practices ranged from 71% to 100% (M = 81.03), with teacher practices from 72% to 95% (M = 79.54), students with BD from 77% to 95% (M = 81.03), and students with average behavior from 81% to 100% (M = 91.46). Finally, data were compared on an interval-by-interval basis to calculate a kappa coefficient for each session (Kazdin, 1982). Because we used frequency data nested in timed intervals, we calculated kappa reliability between each observer by comparing agreements of occurrence and nonoccurrence for each behavior (e.g., choice, directives, interval by interval). The mean kappa coefficient for all behavior across sessions was .780. The kappa coefficient was .763 for all teacher practices (range .612 for negative behavior and .891 for choice), .766 for students with BD (range .710 for negative and .864 for social behavior), and .813 for students with average behavior (range .763 for negative and .923 for social behavior).

Study Variables and Data Preparation

Teacher practices and activity settings are listed in Table 2. Due to low rates of behavior in 3 of the 4 negative student behavior subcategories (i.e., negative academic behavior, putdowns, pure physical behavior) these types of negative behavior were combined into one composite negative/physical behavioral score. Intercorrelations were run between this negative/physical behavioral score and the remaining variables (i.e., social not appropriate, academic not appropriate) to assess further overlap. A final negative behavioral score was derived by summing the three highly correlated negative variables (i.e., academic not appropriate with social not appropriate, r = .579, n = 57, p = .001; academic not appropriate with negative/physical, r = .658, n = 57, p = .001; social not appropriate with negative/physical, r = .683, n = 57, p = .001).

Teacher practices were grouped into five factors based on the conceptual framework presented for this study (see Table 2). Within each factor (except Factor 4), frequency data of each practice were summed across observations for each activity setting (e.g., transitions) and divided by total observation time

per activity setting and total number of days to yield one total rate for each teacher practice per each activity setting (i.e., a per-min score). Cooperative practices (Factor 4) was calculated by coding as present or not present the number of (a) student-directed activity settings, (b) divergent tasks, (c) group facilitation strategies, and (d) number of different concurrent activities across all activity settings and then summing the practices across all days (i.e., a summary score across days and settings).

Results

Student Group Differences as a Function of Setting

After fitting a model for each student behavior, normal quantile plots of the residuals (i.e., social, task-appropriate, negative) were inspected for linearity. Task-appropriate and negative behavior were normally distributed. Social behavior was not normally distributed, and transformation of the data did not normalize the distribution; however, the *F* test is fairly robust against violations of normality (Weinfurt, 1995).

Differences between students with BD and typical students in classroom behavior as a function of type of activity setting were examined using repeated-measures analyses of variance (RMANOVA) for each of the three noncorrelated student behaviors (i.e., task-appropriate, social, negative) in a two-group (matched pairs of average students with students with BD) nested in a three-activity setting (i.e., independent, teacher-directed, transitions) design. (Because only five teachers used the student-directed activity setting, it was not possible to include this setting in the setting comparison.) Bonferroni post-hoc comparisons were used to follow up main activity setting effects and assess which settings differed. Because of a priori predictions that activity settings would affect student groups differently, simple group effects in each activity setting (including student-directed) were examined even when group-by-activity-setting interactions did not reach significance. Keppel (1982) indicated that "analytical comparisons can be conducted on a set of data without reference to the significance or nonsignificance of the omnibus *F* test" (p. 106).

Alpha < .10 was considered significant for all analyses and follows from related work using parametric analyses with similar sample sizes ranging from 15 to 25 participants (e.g., Dodge, 1980). Stevens (1996) also indicated that "there are situations, however, when it makes sense to use alpha levels other than .05 or .01. For example, if making a Type I error will not have serious substantive consequences, or if the sample size is small, alpha = .10 or .15 is quite reasonable" (p. 4). It could then be argued that a design involving only 16 participants does not warrant a ready interpretation of significant effects. Rosenthal and Gaito (1964) demonstrated that given two experiments with different sample sizes (e.g., 5 and 80) producing *F*-values with the same level of significance, the experiment with the smaller sample size would produce more impressive results. Keppel (1991) similarly concluded that significant results with small sample sizes are more impressive than equivalent results with large sample sizes.

Social Behavior

There was a main effect for activity setting, $F(2, 14) = 9.15$, $p = .002$. Bonferroni comparisons indicated that all students exhibited higher rates of social behavior during transitions ($M = .633$, $SD = .904$) than in either of the other activity settings (independent seatwork $M = .047$, $SD = .112$; teacher-led groupwork $M = .010$, $SD = .022$). Simple group effects for each activity setting were not significant ($Fs < 1$). Also there was no main effect of group or group-by-setting interaction (both $Fs < 1$).

Task-Appropriate Behavior

There was a main effect of activity setting, $F(2, 14) = 12.45$, $p = .001$. Bonferroni comparisons indicated that students exhibited higher rates of task-appropriate behavior, which included task-oriented statements and compliance with teacher directives, again during transition settings ($M = 1.040$, $SD = .639$) than in independent seatwork ($M = .171$, $SD = .205$) or in teacher-directed groupwork activity settings ($M = .436$, $SD = .324$). A main effect of group, $F(1, 7) = 3.84$, $p = .090$, with simple effects in each setting indicated that students with BD exhibited higher rates of task-appropriate behavior ($M = .288$, $SD = .251$) than students with average behavior ($M = .068$, $SD = .067$) only during independent seatwork activity settings, $F(1, 7) = 4.58$, $p = .077$. No other simple effects were found ($Fs < 2$).

In sum, (a) during transitions all the students exhibited higher rates of task-appropri-

ate and social behavior than in any other setting, and (b) during independent seatwork activities, students with BD exhibited higher rates of task-appropriate behavior than students with average behavior.

Negative Behavior

There was a main effect of group, $F(1, 7) = 3.76$, $p = .093$, with students with BD ($M = 1.046$, $SD = 1.54$) exhibiting higher rates of negative behavior across all three activity settings than students with average behavior ($M = .217$, $SD = .246$). Simple effects indicated that students with BD ($M = .760$, $SD = .754$) exhibited higher rates of negative behavior than comparisons ($M = .177$, $SD = .221$) only in the teacher-directed activity setting, $F(1, 7) = 5.62$, $p = .049$. There was no effect for activity setting nor an interaction, both Fs < 1.

Teacher Practices as a Function of Activity Setting

Correlations were run on all teacher practices (i.e., choice, social, positive, directives, coaching, feedback, negative, cooperative) to assess their interrelations. Because of significant associations between coaching and feedback ($r = .81$, $n = 8$, $p = .014$) and between positive and social practices ($r = .85$, $n = 8$, $p = .006$), these were combined into one composite coaching/feedback score and into one composite positive/social score, respectively.

Differences in rates of teacher practices were examined using one-way RMANOVAs for activity setting (i.e., teacher-directed, independent, transitions) for each of the six noncorrelated teacher practices (i.e., choice, directives, positive/social, coaching/feedback, negative, cooperative). Post hoc comparisons were made to follow up significant main effects of activity setting. The data from these analyses are presented in Table 3. These analyses indicate that (a) rates of teacher choice (Factor 3) and coaching/feedback (Information Explicitness, Factor 1) were higher during teacher-directed activity settings than in any other setting and (b) rates of teacher directives (Factor 1) and positive/social practices (Support, Factor 2) were higher during transitions than during other settings. In other words, in settings defined as teacher-directed (i.e., transitions and teacher-directed), teachers used more coaching/feedback and directive statements (Factor 1, Information Explicitness) and positive practices (Factor 2, Support), and they provided more choice (Factor 3). Negative practices (Factor 4) were not associated with specific activity settings.

Relationship of Teacher Practices to Student Behavior

Because we expected a positive learning climate to be endemic, we assessed the relation between teachers' positive/social statements and the task-appropriate and social behavior of students. We also conducted specific correlations (a) between each of three teacher practices (i.e., choice, directives, coaching/feedback) and student task-appropriate behavior and (b) between teacher negative behavior and student negative behavior. For each activity setting, we report only the few significant correlations between teacher practices and student behavior.

Transitions

During transitions, (a) teachers exhibited higher rates of positive/social behavior than they did in other settings, (b) all students exhibited higher rates of social and task-appropriate behavior than they did in other settings, (c) teachers' negative behavior was related to the negative behavior of only students with BD ($r = .792$, $n = 8$, $p = .019$), and (d) teachers' use of choice was related to task-appropriate behavior only for students with average behavior ($r = .675$, $n = 8$, $p = .066$).

Teacher-Directed Settings

In teacher-directed settings, (a) teachers used a higher rate of coaching/feedback than in other settings, (b) teachers' negative behavior was related to their students' negative behavior only for students with BD ($r = .691$, $n = 8$, $p = .057$), and (c) negative behavior differentiated between students with and without BD only in this setting.

Student-Directed Settings

In student-directed settings, teacher positive/social practices were related to the task-appropriate behavior of all students ($r = .305$, $n = 8$, $p = .107$), which was significant only for students with BD ($r = .687$, $n = 8$, $p = .059$). However, student-directed settings were the only type of setting in which we failed to find a relationship between teacher negative behavior and the negative behavior of students with BD.

TABLE 3
Teacher Practices as a Function of Type of Activity Setting

Access to Information/Social Stimulation	*Low*		*High*		
Control over Pacing	*Student*	*Teacher*	*Student*	*Teacher*	
Activity Settings	*Independent*	*Teacher-directed*	*Student-directed*	*Transitions*	*F(2, 21)*
Factor 1					
Directives					53.36****
M	$.450_b$	$.945_b$	.728	4.013_a	
SD	.432	.399	.262	1.153	
Coaching/feedback					6.07**
M	$.123_b$	$.440_a$	.308	$.117_b$	
SD	.157	.320	.339	.084	
Factor 2					
Positive/social					3.02*
M	$.255_b$	1.147	.774	1.546_a	
SD	.288	.568	.676	1.750	
Factor 3					
Choice					4.82**
M	$.001_b$	$.123_a$	.018	$.028_b$	
SD	.003	.135	.024	.047	
Factor 4					
Negative					2.08
M	.153	.277	.006	.733	
SD	.265	.474	.013	.883	

Note. Analyses were performed without the student-directed activity setting in the model because only 5 teachers used this setting. Means in the same row that do not share subscripts differ significantly in the Bonferroni comparison.
*$p < .10$. **$p < .05$. ****$p < .0001$

Independent Seatwork

In independent seatwork, (a) teachers' positive/social practices were related to the rate of task-appropriate behavior for all students ($r = .858$, $n = 8$, $p = .006$), which was significant only for students with behavior difficulties ($r = .841$, $n = 8$, $p = .012$); (b) teachers' use of coaching/feedback was related to task-appropriate behavior for all students ($r = .836$, $n = 8$, $p = .010$), which was significant only for students with BD ($r = .813$, $n = 8$, $p = .025$); (c) teachers' negative behavior was related to the negative behavior of only students with BD ($r = .673$, $n = 8$, $p = .067$); and (d) students with BD exhibited higher rates of task-appropriate behavior than students with average behavior in this setting.

Discussion

The main purpose of this study was to determine whether specific teacher practices were associated with the task-appropriate behavior of students with average behavior and, more important, of students with BD. Because we assumed that behavior would be altered by the nature of the specific activity settings, we assessed teacher practices and student behav-

ior within settings. Previous research had examined behavioral differences between comparison group children and children with externalizing behavior in specific settings (for review see Zentall, 1985; 1995), but we found no research that observed the behavior of students with BD in relationship to the practices of teachers within settings. Research on interactions of students with E/BD and their teachers has been conducted in self-contained settings but without attention to activity settings (Wehby, Symons, & Shores, 1995). In addition, the present study (a) used defined groups and direct observation methodology, (b) included a matched comparison group of students with average behavior, and (c) described our nonparticipating sample of teachers.

However, in drawing conclusions we recognized that there were limitations to this study. Limitations with respect to the generalizability of our findings are related to the number and nature of our participating teachers. These teachers represented five different schools, but their consent in response to initial and follow-up mailings was low; administrators' consent rates were much higher. Of the teachers who returned a Reason for Nonparticipation Checklist, 12% did not have students with behavioral problems in their classes and 49% said they were not comfortable identifying students with classroom behavioral problems. Thus, those teachers who did agree to participate may have been more comfortable making behavioral judgments, perhaps due to their greater experience. That is, our participating sample represented educators with more teaching experience (i.e., 75% had taught for more than 20 years and had earned masters degrees). To include a broader sample of less experienced teachers, future researchers might ask independent observers to nominate students with BD or define students at risk for BD. Other reasons that teachers gave for nonparticipation were related to difficulties with classroom logistics (i.e., 47% said that they were too busy, 7% that observation procedures were too intrusive), which again could be attributed to teachers' having less experience. Difficulty finding teachers willing to participate may be part of the reason this important area of study is undeveloped in the literature. Thus, these findings may best be generalized to teachers who have experience.

It should also be noted that it was not possible in this naturalistic observation study to separate the setting from the teacher practices that were naturally occasioned by that setting. Finally, this was correlational research, and the direction of observed relationships was not possible to determine, even though it could be inferred from some findings. For example, teachers' use of directives and of coaching/feedback during seatwork more likely contributed to higher rates of task-focused student behavior, because teachers would have little need to provide additional information to students who were already academically engaged. Also, cooperative practices (i.e., use of divergent tasks, student-directed settings, different concurrent activities, group facilitation strategies) probably increased the opportunity for student interaction and thus the rate of task-oriented statements directed to their peers.

Another caveat regarding our study concerns the nature of the student sample. Students identified for special education as having E/BD tend to be those with the most extreme problems (Kauffman & Wong, 1991). However, most students in our study had not been identified as having E/BD, even though the majority met six or more criteria for impulsivity/hyperactivity from teacher checklists of the DSM-IV, and all met the criteria for either the interpersonal difficulties or inappropriate behavior subscales on the BES-2, an instrument used to assist in the diagnosis of behavioral disorders or emotional disturbance. Furthermore, the rates of negative behavior were five times higher for these students than for students with average behavior. This rate is comparable to the six times higher rates of aggressive behavior documented for aggressive children in self-contained settings than for controls (e.g., Wehby et al., 1995). The reason that most students in our sample were not identified as having E/BD could be attributed to the fact that they were achieving within the expected range for students without E/BD.

Thus, our findings can be generalized to groups of students with behavioral difficulties who may be at risk for E/BD but who appear to be achieving at grade level in the general education setting. Within these constraints, we draw the following conclusions about teacher practices and activity settings as they are summarized in Table 4.

TABLE 4
Summary of Findings

			Findings Significant for:	
Positive Teacher Practices	***Positive Student Behavior***	***All Students***	***Group***	***Setting***
	Task Appropriate	Yes		S-D > T-D & SW
	Task Appropriate		BD > Average	SW
	Task Appropriate and Social	Yes		TR > T-D & SW
Teacher Directives (Factor 1)	Task Appropriate	Yes	Average	
Teacher Directives (Factor 1)	Task Appropriate		BD	S-D, SW
Teacher Coaching/Feedback (Factor 1)	Task Appropriate	Yes	BD	SW
Positive/Social (Factor 2)	Task Appropriate and Social	Yes		
Positive/Social (Factor 2)	Task Appropriate		BD	SW, S-D
Teacher Choice (Factor 3)	Task Appropriate		Average	TR
Cooperatives Practices (Factor 4)	Task Appropriate		BD	
Negative Teacher Practices	***Negative Student Behavior***	***All Students***	***Group***	***Setting***
Teacher Negative	Negative		BD	T-D, SW, TR
	Negative		BD > Average	T-D

Note. S-D = Student-directed activity setting, T-D = Teacher-directed activity setting, SW = Seatwork setting, TR = Transitions.

Teacher Practices and Student Classroom Behavior

Across activity settings, positive/social teacher practices (Factor 2) were related to the task-appropriate and positive social behavior of students. Although the most probable direction of effects suggests that teachers' positive practices improved student behavior, it could be that teachers were more positive when their students were task- or socially appropriate, and clearly there would be many instances when this relationship would be bidirectional.

We also found across settings that classrooms characterized by a greater frequency of cooperative practices (Factor 4) were associated with more academic task-appropriate behavior, specifically of students with BD. Prior research on cooperative learning groups (using open-ended tasks with divergent solutions) had indicated that small groups that included one student with BD had group members who participated less and listened to each other less than groups without such a member (Pomplun, 1997). However, this research did not use our broader definition of cooperative practices, which, in addition to divergent tasks and solutions, included the teachers' use of different concurrent activities, student-directed learning, and group facilitation strategies. These activities typically involved more choice, with opportunities for more appropriate levels of task difficulty and task interests. Our findings, however, are consistent with findings reported by Gelb and Jacobson (1988) that unpopular boys in a cooperative group activity made more group-oriented statements and their peers were more tolerant of them than in a competitive activity. Competitive settings facilitate social comparison, which may increase differences between unpopular children and their peers (Ames & Archer, 1988; Elliott & Dweck, 1988).

Task-appropriate behavior was associated with teacher directives (reminders and redirects, Factor 1) as another type of information-explicit practice for the combined student groups, but in this case it was significant only for students with average behavior, with a trend for students with BD. These across-setting and across-group findings are consistent with prior work reporting that the behavioral and performance gains from teachers' providing structure (i.e., specific versus general instructions) were not greater for a related sample of students with ADHD than for their classmates (Madan-Swain & Zentall, 1990; Zentall & Leib, 1985). In this study, we found that directives were correlated with positive task-appropriate behavior for students with BD only in student-directed settings. Overall, we have concluded that all students benefit from teachers who provide clear statements about what is expected, but in small-group settings students with BD may derive additional benefits when teachers are explicit about task requirements.

Activity Setting Effects

Settings were predefined to differ in the amount of access they provided to teachers' time and feedback and to teachers' direction or control. We predicted that when students with BD had access to their peers and teachers it would also give them greater access to information, feedback, and social stimulation. We expected that students with BD would be less negative and produce better work when they or their peers directed their own activities. That is, in student-directed settings, students would have greater choice and access to appropriate levels of task difficulty, interest, and pacing without undue wait time.

In line with our predictions for all students, the rate of task-appropriate behavior was higher in student-directed settings than in teacher-directed or independent seatwork settings. Furthermore, only in the teacher-directed setting was the rate of negative behavior greater for students with BD than for their classmates, and the seatwork setting was the only setting in which students with BD demonstrated more task-appropriate behavior than their classmates. Thus, student- and self-directed settings appeared to normalize the negative behavior of students with BD.

In these settings, the practices that teachers employed appeared to be critical only for students with BD. For example, during student-directed settings, we concluded that teachers' use of positive/social practices and directives (i.e., information explicitness) were positively related to task-appropriate behavior for students with BD. That students with BD most resembled their classmates in student-directed settings appears counterintuitive to what many educators think students with BD need. Our findings could indicate, however, that in less-structured settings where peer interaction (i.e., feedback, stimulation) and student direction or self-direction (i.e., pacing,

choice) was high, experienced teachers shaped student behavior with increased use of positive statements and directives. This conclusion is supported by related evidence that during independent seatwork the task-appropriate behavior of students with BD was associated with teacher positive/social practices and directives. It is interesting that students with BD actually demonstrated higher rates of task-appropriate behavior than their classmates only during independent seatwork.

We have concluded that the practices teachers use can overcome some difficulties inherent to a setting for students with BD. Similarly, for students with E/BD, Dunlap and colleagues (1993) identified a functional relationship between teacher praise and the desirable behavior of a 4th-grade boy. Our study extends this research by finding that teachers' positive verbal responses were related to task-appropriate behavior specifically for students with BD during both student-directed and independent seatwork settings. Unfortunately, related literature in self-contained classes for students with E/BD indicates that teachers actually use low rates of praise (Wehby et al., 1995).

Also, we found that teachers' negative practices were significantly correlated with the negative behavior of students with BD in three of the four settings (i.e., teacher-directed, independent seatwork, and transitions). This correlation between teacher and student negative behavior was *not* found in student-directed activity settings, probably because *only* in those settings did students with BD not exhibit more negative behavior than their classmates. In contrast, when teachers selected teacher-directed settings and directed and controlled the pacing of learning, students with BD exhibited higher rates of negative behavior than students with average behavior.

Also associated with teacher-directed settings more than with any other setting were higher rates of teachers' coaching and feedback. Teachers' use of coaching or feedback in teacher-directed settings may have increased wait time and set the occasion for negative student behavior. Even though an association between teacher coaching/feedback and student negative behavior was not documented in these settings, the relationship may be indirect, with increased wait time a specific mediator for student misbehavior. That is, wait time and passive conditions do appear to contribute to disruptive behavior. For example, students with ADHD have been found to be more active and vocal during listening and passive learning tasks than during active tasks (Charlebois, Normandeau, Vitaro, & Berneche, 1999; Zentall & Meyer, 1987). Wait time may also be longer during teacher-paced lessons, which have also been documented to elicit more off-task and inappropriate behavior than self-paced lessons (Whalen et al., 1978).

Coaching/feedback practices appeared to have a different and more positive outcome when used on an individual basis during independent seatwork (i.e., where wait time would not be a mediating factor). That is, coaching/feedback was positively associated with task-appropriate behavior (i.e., task-related statements or questions and compliance with teacher instructions) for all students. This effect was significant only for students with BD. Because independent seatwork would allow for individual pacing (a positive outcome) but would *not* provide access to others (a potentially negative outcome), we expected and found that the practices that teachers employed would also be the determining factor in this activity setting. In other words, when teachers provided more coaching/feedback—perhaps compensating for potential loss of their attention during independent seatwork—it was positively related to the ability of their students with BD to maintain task-appropriate behavior. We did not assess, however, whether more coaching/feedback was given to students with BD specifically. Brophy and Good (1986) similarly examined independent seatwork time and reported that teacher monitoring and assisting (coaching) practices were associated with student achievement assessed in a follow-up 3-year study. More generally across settings, Larrivee (1985) found that teacher feedback was related to the amount of time students of low ability were observed to engage in academic learning.

For transitions, as well, we expected that the practices teachers selected might make a difference, because these settings would naturally provide high access to others but *not* allow for individual pacing (i.e., potentially positive outcomes mixed with negative). We found that mean rates of combined social and task-appropriate behavior for all students were higher during transitions than during teacher-directed settings or independent seatwork. One explanation for this finding was that the definition of task-appropriate behavior included task-oriented statements and compliance

with teacher directives, which occurred more often during transitions than in other settings. So it is possible that task-appropriate behavior during transitions could have been somewhat inflated by the nature of that setting. However, because it was a rate score, a more likely explanation is that teachers used more directives and positive/social practices during transitions, which may have tipped the balance toward positive outcomes for all students.

Conclusion

We concluded that some practices (i.e., cooperative, support, information explicitness) were associated with higher rates of task-appropriate and lower rates of negative behavior, specifically for students with BD. Moreover, settings that were student centered, which afforded greater access to others (i.e., information, feedback, social stimulation, choice, interest, pacing), appeared to be another primary factor in student outcomes. That is, only in student-directed settings was (a) a group difference in negative behavior *not* observed and (b) a bidirectional relationship between teacher and student negative behavior *not* found. Thus, either student-directed learning activities brought out the best in teacher practices or student-directed settings provided an optimal learning environment.

Also in line with our predictions, but without evidence as to who initiated negative interactions, (a) negative behavior was greater for students with BD than for their classmates only in the teacher-directed setting, and (b) more negative student behavior was observed in classrooms in which teachers exhibited higher rates of negative practices. Some teachers may use negative practices because they have been immediately reinforced by cessation of student misbehavior. This reasoning is consistent with the coercion hypothesis of Patterson and Reid (1970). That is, teacher countercontrol responses may result in short-term student compliance, even though such aversive interactional patterns may produce poorer long-term effects such as higher rates of negative behavior and eventual student dropout (Rumberger, 1987).

When a setting had mixed factors (i.e., low teacher access but high student pacing as in seatwork and vice versa for transitions) or only negative factors (i.e., teacher-directed), the practices used by the teacher were significantly associated with student behavior, especially for children with BD. That is, there were practices (i.e., directives, coaching/feedback, positive/social statements) that teachers used apparently to compensate for setting problems. It is important to remember, however, that an apparently positive teacher practice may be associated with secondary negative effects through a mediating variable of wait time. So coaching/feedback may have increased wait time in teacher-directed but not in independent seatwork settings. The mediating effects of wait time need further empirical study.

Finally, and in contrast to students with BD, students with average behavior maintained task-appropriate behavior across settings and teacher practices. Only during transitions did typical students display higher rates of task-appropriate behavior than students with BD in response to teachers' offering choice (i.e., requests to the whole class for verbal comments, choices about what task to do next). Students with average behavior may be verbally more assertive or confident in commenting on previous or upcoming learning tasks.

The educational implications of this research are that teacher practices and settings have greater potential for altering task-appropriate behavior of students with behavioral difficulties than for students without such difficulties. This information is particularly important in light of some evidence indicating that general educators may be unwilling to provide some accommodations for students with BD (Safran & Safran, 1987; Soodak & Podell, 1994; Zentall & Stormont-Spurgin, 1995), and teachers report that they would resort to punitive methods of control (e.g., removal, threats, denial of privileges) in response to hostile-aggressive student behavior (Brophy, as cited in Lloyd et al., 1990). Because of these attitudes, we assumed it was necessary to observe which teacher practices were already being used effectively by educators.

One promising practice that some teachers appeared to be willing to use was type of setting (i.e., student-directed with high choice/pacing and access to information, feedback, and social stimulation). Directions for future research might be to identify those factors that contribute to teacher selection of student-directed settings. Currently the literature indicates only that teachers with low self-efficacy are less likely to use student-directed instruction than whole-class, teacher-directed

instruction when working in language arts classes with middle school students (Ashton & Webb, 1986). In this study we found that the three teachers who failed to use any student-directed activity settings also scored above the median of negative practices during transitions, a nonoptional self-directed setting. It may be that teachers who use more effective practices allow their students to interact with their classmates, direct the learning task, and control the pace.

These findings can be generalized to middle school students with and without BD in activity settings in general education. Little is known about effective teaching practices for federally identified students with E/BD (Kauffman & Wong, 1991). Therefore, future research needs to assess effective practices of teachers instructing identified E/BD samples and individuals, and to identify and assess constructs underlying other types of settings (e.g., learning settings of whole language, direct instruction).

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